South Fork Payette River Subbasin Assessment

Final

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Subbasin Assessment of the South Fork Payette River

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Prepared by:
Craig Shepard
Boise Regional Office
Department of Environmental Quality
1445 North Orchard
Boise, Idaho 83706

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Water quality and stream discharge data were downloaded from the United States Geological Survey (USGS) Web site. Climate data were downloaded from the Western Regional Climate Center World Wide Web site.

The cover photograph, taken by Cynthia Grafe on August 31, 1998, shows the South Fork Payette River near Lowman, Idaho.

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Abbreviations, Acronyms, and Symbols

§303(d)	Refers to section 303 subsection (d) of the Clean Water Act, or a list of impaired water bodies required by this section
µ	Micro, one one-thousandth
§	Section (usually a section of federal or state rules or statutes)
AWS	agricultural water supply
C	Celsius
cfs	cubic feet per second
cm	centimeters
CWA	Clean Water Act
DWS	domestic water supply
F	Fahrenheit
HUC6	USGS sixth field (12-digit hydrologic unit code)
IDAPA	Abbreviation for Idaho Administrative Procedures Act, refers to citations of Idaho administrative rules
IDWR	Idaho Department of Water Resources
NPDES	National Pollutant Discharge Elimination System
NTU	nephelometric turbidity unit
PCR	primary contact recreation
SBA	subbasin assessment
SCR	secondary contact recreation
TMDL	total maximum daily load
TSS	total suspended solids
U. S.	United States
U.S.C.	United States Code
USFS	United States Forest Service
USGS	United States Geological Survey
WBID	water body identification number
WQLS	water quality limited segment
WQS	water quality standard

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correct double-sided printing.

Executive Summary

The federal Clean Water Act (CWA) requires that states and tribes restore and maintain the chemical, physical, and biological integrity of the nation's waters. States and tribes, pursuant to Section §303 of the CWA, are to adopt water quality standards necessary to protect fish, shellfish, and wildlife while providing for recreation in and on the nation's waters whenever possible. Section 303(d) of the CWA establishes requirements for states and tribes to identify and prioritize water bodies that are water quality limited (i.e., water bodies that do not meet water quality standards). States and tribes must periodically publish a priority list (a"§303(d) list") of impaired waters. Currently this list must be published every two years. For waters identified on this list, states and tribes must develop a total maximum daily load (TMDL) for the pollutants, set at a level to achieve water quality standards.

This document addresses the water bodies in the South Fork Payette River Subbasin that have been placed on Idaho's current §303(d) list.

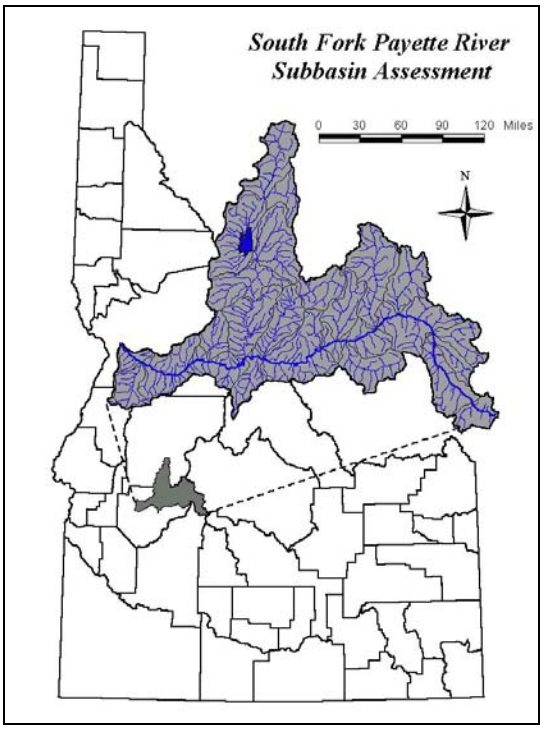
This subbasin assessment (SBA) has been developed to comply with Idaho's TMDL schedule. The assessment describes the physical, biological, and cultural setting; water quality status; pollutant sources; and recent pollution control actions in the South Fork Payette River Subbasin located in southwest Idaho.

The starting point for this assessment was Idaho's current §303(d) list of water quality limited water bodies. The SBA examines the current status of §303(d) listed waters and identifies potential sources of pollutants throughout the subbasin.

Subbasin at a Glance

From the Sawtooth Wilderness Area boundary to the confluence of the Middle Fork Payette River, the South Fork Payette River is listed on the 1998 §303(d) list for fine-grained sediment (Figure A). This listing was based on the 1990 Boise National Forest Management Plan (Boise National Forest 1990), which stated that a goal for the forest was to manage the watershed to reduce sedimentation in the South Fork Payette River. In the plan, beneficial uses, as identified in the Idaho water quality standards (WQS), were not reported as impaired.

The South Fork Payette River Subbasin contains bull trout, a species listed as threatened under the Endangered Species Act. The South Fork Payette River and Deadwood River are key bull trout watersheds in Idaho. Fine-grained sediment is one of the factors identified as limiting bull trout habitat in the subbasin.



South Fork Payette River Basin	
5th Field HUC#:	17050120
Water Body:	SF Payette River
Boundary:	Wilderness Boundary to Payette River
Ecoregion:	Northern Mountains
Pollutants:	Sediment
Beneficial Uses:	Salmonid Spawning, Cold Water Aquatic Life, Primary Contact Recreation
Pollution Sources:	Non-Point Sources
Size:	520,318 acres

Figure A. South Fork Payette River Subbasin at a Glance.

Key Findings

The South Fork Payette River near Lowman, Idaho, has been monitored for water column sediment (suspended sediment concentration), bedload, and discharge. Extensive flow records also exist near Garden Valley, Idaho. Limited biological data are available for the South Fork Payette River. Most biological monitoring has been conducted in the tributaries.

The suspended sediment concentration data for the South Fork Payette River show that during years of normal flow, when mass wasting events are less prevalent, the water column sediment levels are below the 14-day duration suspended sediment target of 80 mg/L. The data also show that during years of high flow, erosion can be exacerbated and the sediment target exceeded. It is DEQ's belief that any excursions above the target at high flows are within the norms of natural variability and are not impairing beneficial uses.

To determine the expected suspended sediment concentration in the river in a typical flow year, a regression analysis was performed—between paired suspended sediment and flow data. The analysis determined that, at an average annual flow of 861 cfs, the suspended sediment concentration in the river would be 8.0 mg/L, well below the 14-day duration suspended sediment target of 80 mg/L. As a result of these analyses, DEQ does not recommend developing a sediment TMDL for the South Fork Payette River and recommends de-listing sediment from the §303(d) list.

While some anthropogenic sources of sediment (primarily from forest roads) exist within the basin and exceed the Boise National Forest desired future conditions during high flow events, DEQ believes this sediment is not currently impairing beneficial uses. However, road

management activities within the Boise and Sawtooth National Forests should be prioritized and maximized to reduce erosion. This strategy is outlined in Section 3.0 of the SBA.

As part of the South Fork Payette River Subbasin Assessment, the cold water aquatic life beneficial use support status was also determined at fifty-three (53) Beneficial Use Reconnaissance Program monitoring sites encompassing thirty-five (35) streams. Of the 35 streams, it was determined that cold water aquatic life is not fully supported in four of them. These streams may be recommended for §303(d) listing dependant upon results of 2004 BURP data collection. Further data collection efforts may be undertaken, dependent upon results and funding constraints.

Table A summarizes the outcome of the South Fork Payette River Subbasin Assessment.

Table A. Summary of assessment outcomes

Water Body Segment	Pollutant	TMDL(s) Completed	Recommended Changes to §303(d) List	Recommended Schedule Changes
South Fork Payette River WQLS:5186 AU:SW001_05	Sediment	None	De-list sediment	None
Wash Creek – lower WQLS:xxxx AU:SW001_02	Unknown	None	May list pending 2004 BURP data	May prepare informational TMDL
Horn Creek WQLS:xxxx AU:SW001_02	Unknown	None	May list pending 2004 BURP data	May prepare informational TMDL
Chapman Creek WQLS:xxxx AU:SW001_02	Unknown	None	May list pending 2004 BURP data	May prepare informational TMDL
Smokey Creek WQLS:xxxx AU:SW001_02	Unknown	None	May list pending 2004 BURP data	May prepare informational TMDL

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